Status of the Southern DPS of North American Green Sturgeon and the ESA Rulemaking Process

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What is the ESA?

Administered by USFWS and NMFS

Purposes:

- Identify threatened (T) and endangered (E) species
- Conserve and protect T and E and the ecosystems upon which they depend

To conserve and protect:

- Prohibit take (by statute or rule)
- Federal agencies may not jeopardize them or adversely modify their habitat

Definitions

Endangered species: *in danger of extinction throughout all or a significant portion of its range (SPOIR)*

Threatened species: *likely to become endangered within the foreseeable future throughout all or SPOIR*

Species of Concern: *concerns regarding status and threats, but insufficient information is available to indicate a need to list*

The Listing Process

Petition

NMFS receives petition to list or delist a "species"

Petition Finding

NMFS makes finding of whether to accept the petition

- Public Comment Period
- Compilation of data and information

Proposed Listing Decision

- Determine "species"
- Assess extinction risk
- Identify threats to species
- Evaluate conservation efforts
- Issue proposed decision of whether to list

- Public Comment Period
- Peer Review

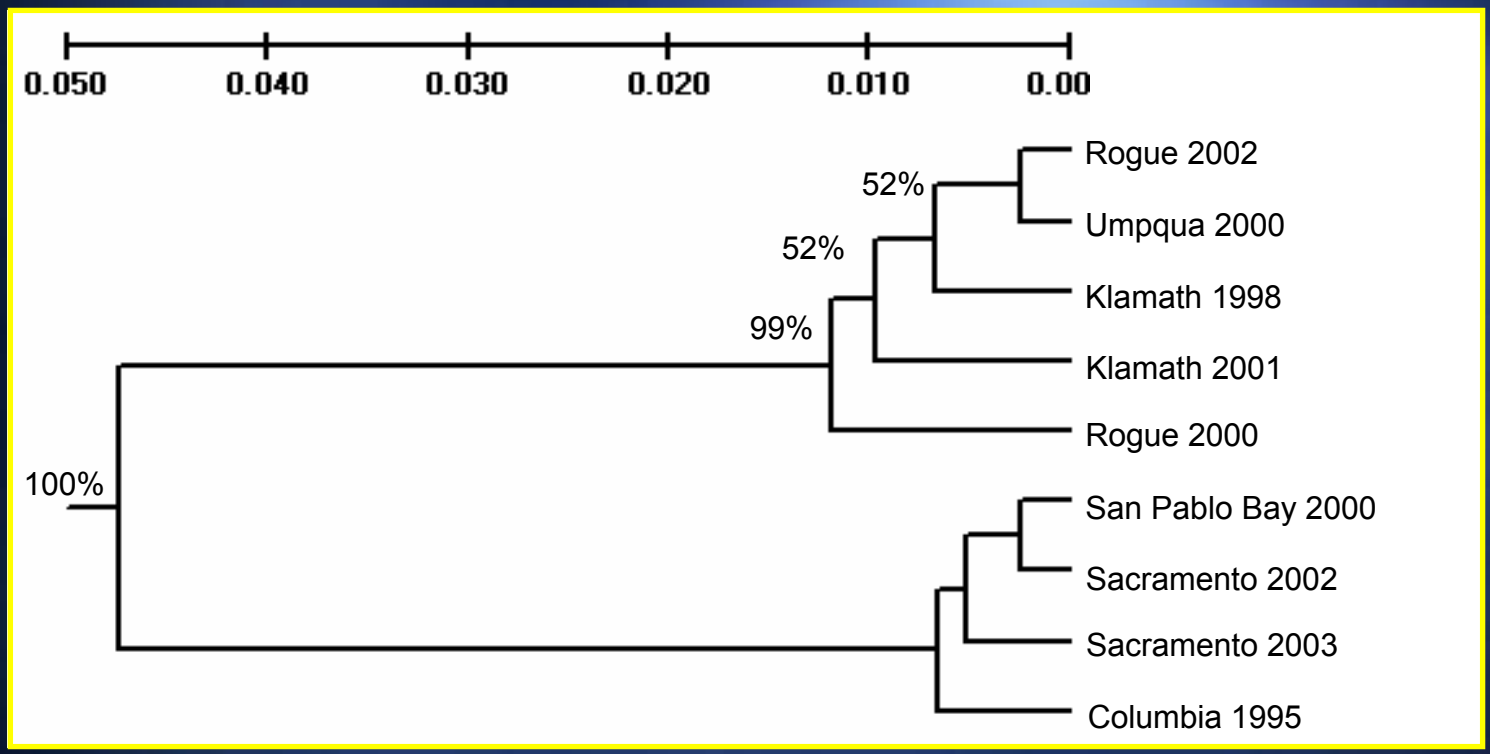
Species Listed

Final Listing Decision

- protective regulations
- critical habitat

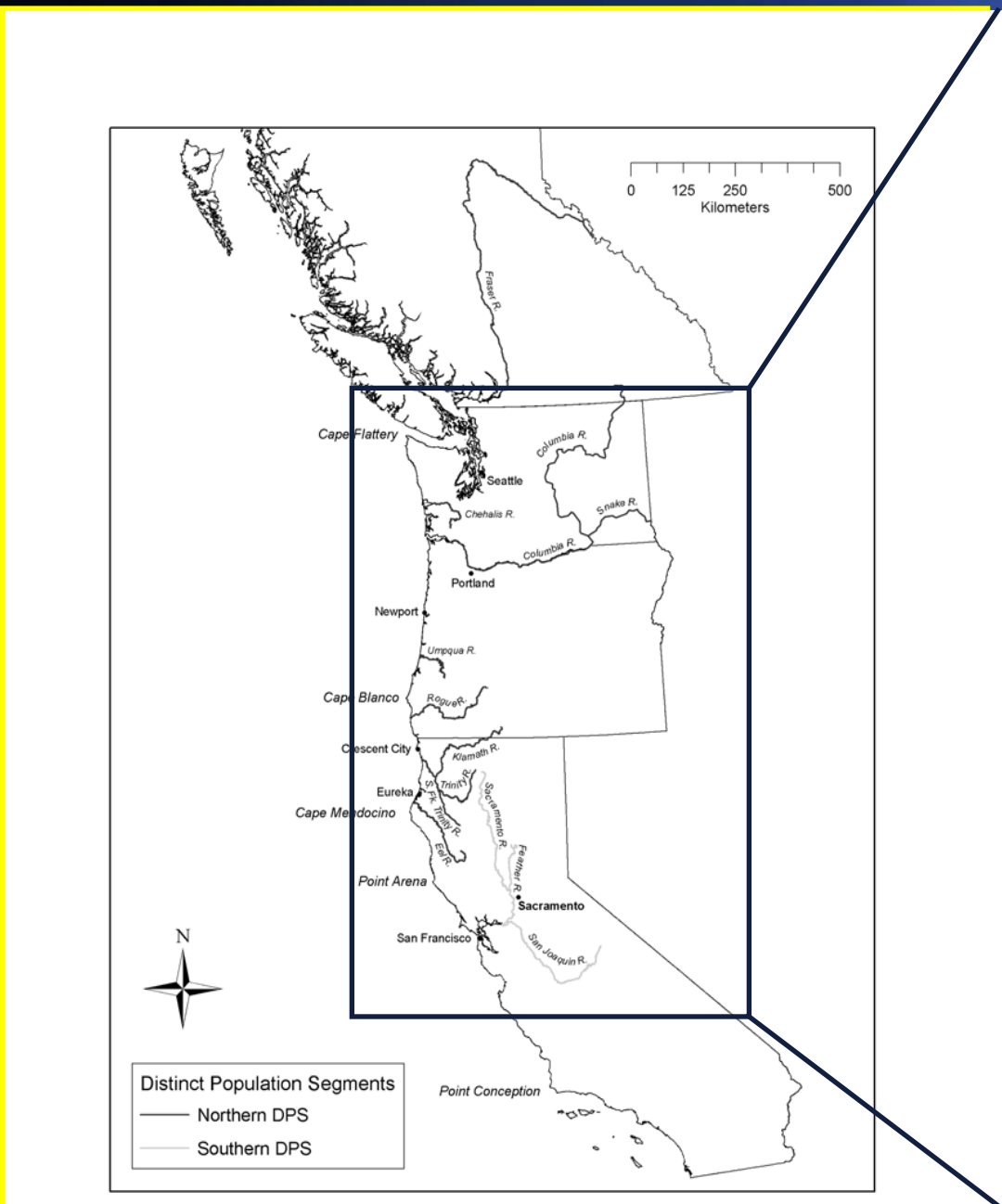
Petition — ***90-days*** — *90-day Finding* — ***1 year*** — *Proposed Rule* — ***1 year*** — *Final Rule*

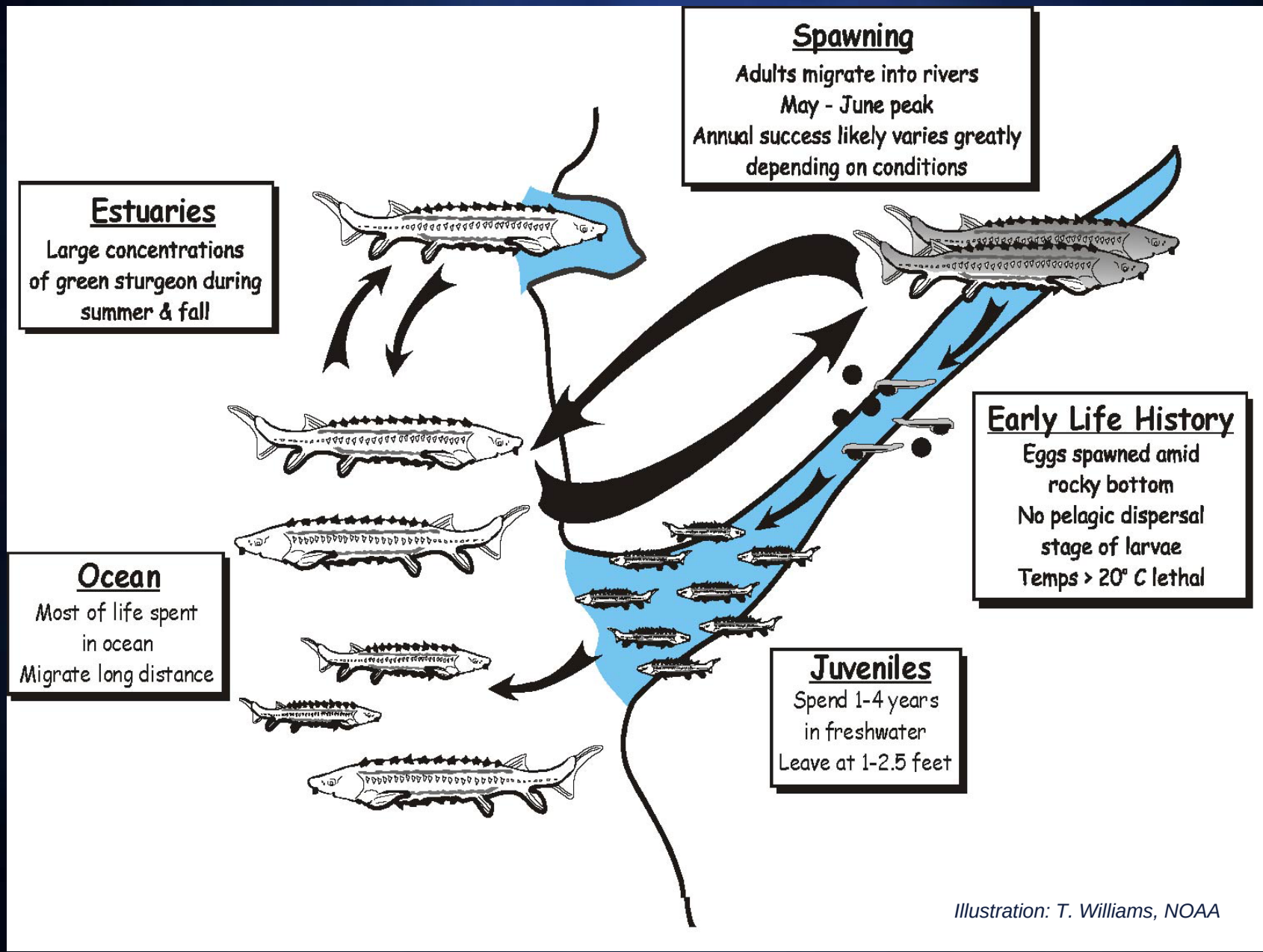
Population Structure



(J. Israel and B. May pers. comm.).

Population Structure




Spawning
Adults migrate into rivers
May - June peak
Annual success likely varies greatly depending on conditions
Estuaries
Large concentrations of green sturgeon during summer & fall
Early Life History
Eggs spawned amid rocky bottom
No pelagic dispersal stage of larvae
Temps > 20° C lethal
Ocean
Most of life spent in ocean
Migrate long distance
Juveniles
Spend 1-4 years in freshwater
Leave at 1-2.5 feet
Illustration: T. Williams, NOAA

Biological Information

Spawning

- •Three Pacific river systems: Sacramento, Klamath & Rogue
- • Spawning habitat requirements are uncertain

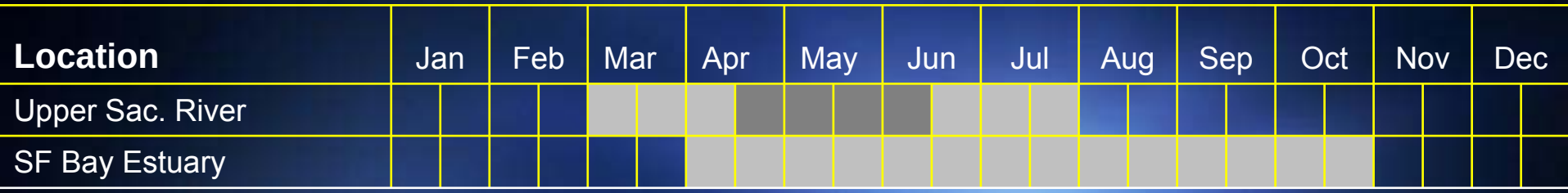
Early Life History

- • Recognized that low flow rates and water temps > 20 ^{o}C likely affect recruitment success
- • Residency time of juveniles in fresh water 1-4 yrs.

Adults

- • Migrations may be extensive
- • Aggregative behavior in estuaries summer and fall
- • Spawning frequency 1- 2 years
- • Limitations on passage likely affect spawning success rates
- • No direct estimates of abundance

Adult (≥13 years old for females and ≥9 years old for males)



Larval and post-larval (≤10 months old)

Juvenile (> 10 months old and ≤3 years old)

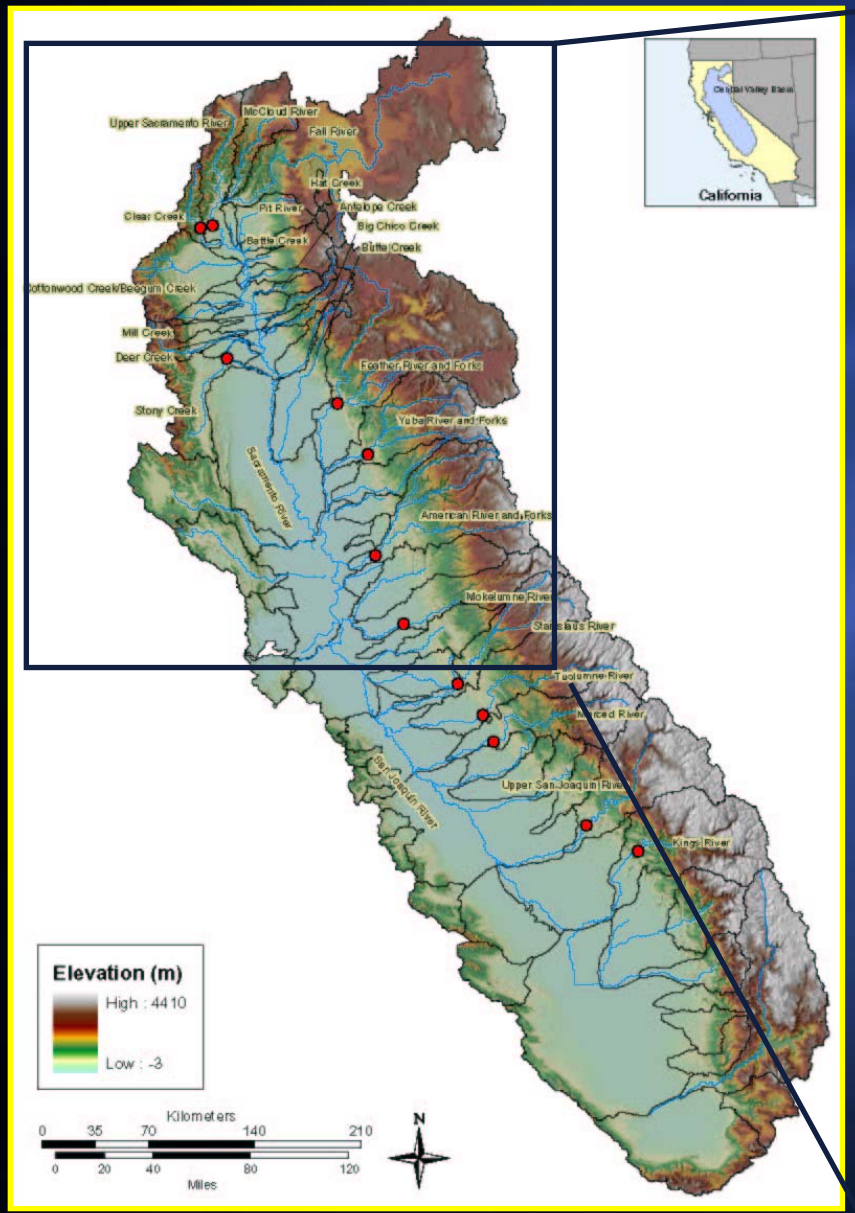
Coastal migrant (3-13 years old for females and 3-9 years old for males)

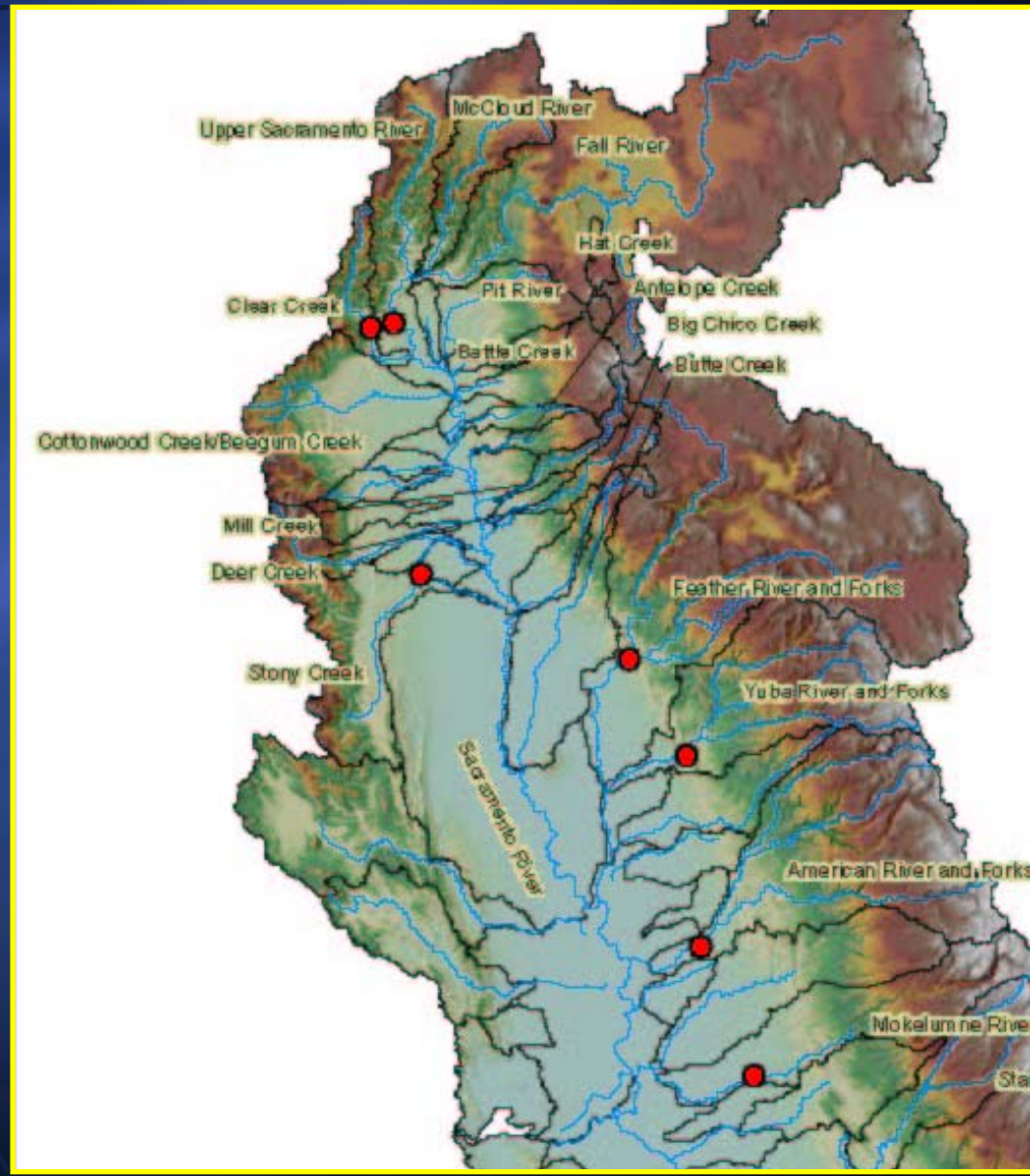
Identification of Threats

Threats assessment by river system within the Southern Distinct Population Segment (DPS)

River	Threats	Life Stage Affected	Listing Factors				
			1	2	3	4	5
Sacramento	Impassible barriers (Keswick and Shasta)	A	X				
	Adult migration barriers	A	X			X	
	Insufficient flow	L, J, A	X				
	Increased temperatures	L, J, A	X				
	Water diversion	L, J, A					X
	Non-native species (e.g., striped bass)	L, J, A			X		
	Poaching	J, A		X			
	Pesticides and heavy metals	L, J, A	X				
	Local fishing	J, A		X			
Feather	Impassible barriers (Oroville)	A	X				
	Extreme low flow rates	L, J, A	X				
	Increased temperatures	L, J, A	X				
	Non-native species (e.g., striped bass)	L, J, A			X		
	Poaching	J, A		X			
	Pesticides and heavy metals	L, J, A	X				
	Local fishing	J, A		X			

Lost Spawning Habitat

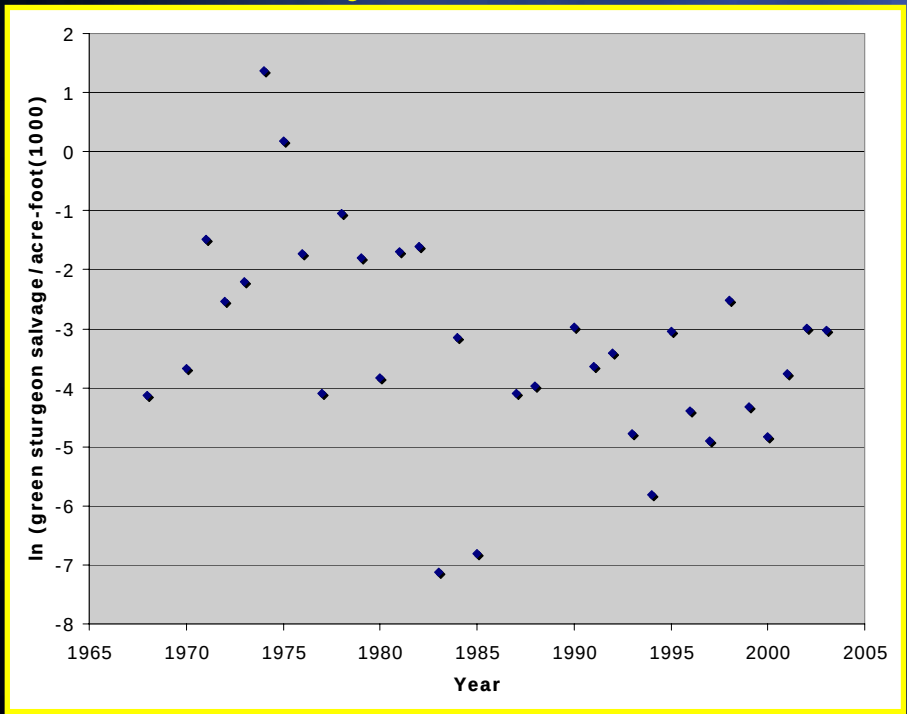




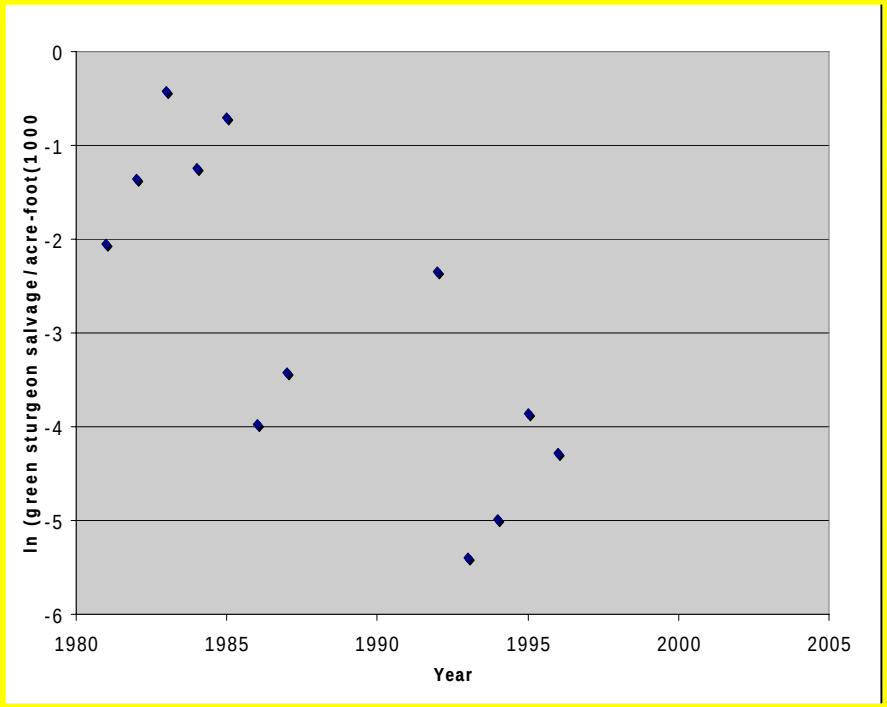
Lindley et al. (2004)

Green Sturgeon Salvage Data

State Facility



Federal Facility



Assessment of Extinction Risk

- One significant spawning area
- Lost spawning habitat above dams
- Threats due to habitat alterations remain
- Best source of fishery-independent data exhibits a negative trend

Considered Protective Efforts

- Fishing regulations
- Central Valley Project Improvement Act (Anadromous Fish Restoration Program)
- California Bay-Delta Program
- Red Bluff Diversion Dam
- Glenn-Colusa Irrigation District
- Salvage Facilities

Final Determination for Southern Distinct Population Segment

Threatened Status=Likely to become endangered in the foreseeable future throughout all or a significant portion of its range

Next Steps for Threatened Species

ESA Section 4(d) Rule

Critical Habitat

Recovery Planning

Update of Status Review in 5 years

What is an ESA Section 4(d) Rule?

May invoke Section 9 prohibitions:

(A) import/export

(B) take[1] within the US or the territorial sea of the US

(C) take upon the high seas

(D) possess, sell, deliver, carry, transport, or ship species taken in violation of (B) and (C)

(E) deliver, receive, carry, transport, or ship in interstate or foreign commerce

(F) sell or offer for sale in interstate or foreign commerce

(G) violate any regulation pertaining to threatened species pursuant to section 4 of this Act

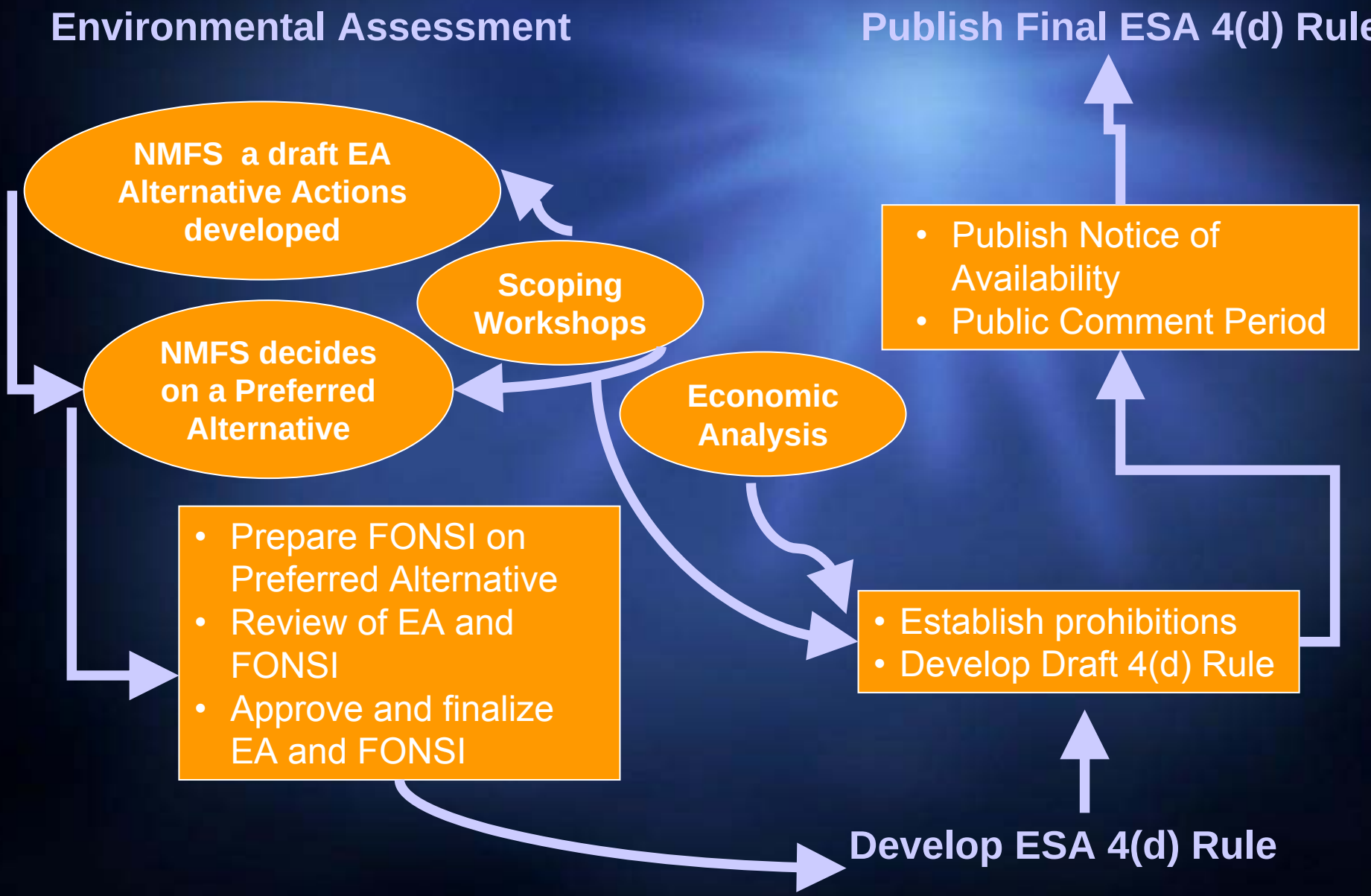
[1] "take" (harass, harm, pursue, hunt, shoot, kill, trap, capture, or collect) of a threatened species is prohibited without specific NMFS authorization

What is an ESA Section 4(d) Rule?

May invoke exemptions (allow certain activities to proceed without applying prohibitions):

- NMFS approval
  - Permitting Process
  - 4(d) Program

The 4(d) Rule Process



Purpose of Our Workshops

Gather information for the development of protective regulations (4(d) Rule) that may be necessary and advisable for the conservation of the threatened Southern Distinct Population Segment of green sturgeon.

Goals of Our Workshops

- List of activities and programs that directly or indirectly affect Southern DPS green sturgeon

- Evaluation of the potential effects that each activity and program may have on green sturgeon

- Identification of activities and programs that contribute to the conservation of green sturgeon

- List of potential ways to modify the activities and programs that do not contribute to the conservation of green sturgeon

- Evaluation of the potential effects these conservation actions may have on green sturgeon, other species, other resources, and the resource users/managers

Focus Questions

(1) What activities or programs exist that might directly or indirectly affect the Southern DPS of green sturgeon?

(2) What types of effects do these activities or programs have on green sturgeon?

(3) Which of these activities or programs contribute to the conservation of green sturgeon?

(4) In what ways can we modify the activities or programs that do not contribute to the conservation of green sturgeon, to minimize their effects?

(5) What types of effects might these actions have on green sturgeon, other species, other resources, and resource users/managers?

Ground Rules

- No debating
- Everyone is encouraged to participate
- All participants are equal
- One person talks at a time
- There are no right or wrong answers – every idea and comment is valid
- Keep comments concise for the recorder
- Remember the focus questions
- Turn off or silence all cell phones and beepers

For More Information:

http://swr.nmfs.noaa.gov